

L3 431254 1-3/MAC
 L3 40862 C 1-3/MAC
 (C/MAC (P) 1-3/MAC)

 => s si 1-3/mac
 324837 SI/MAC
 431254 1-3/MAC
 L4 80868 SI 1-3/MAC
 (SI/MAC (P) 1-3/MAC)

 => s mg .001-1/mac
 58491 MG/MAC
 480333 .001-1/MAC
 L5 28460 MG .001-1/MAC
 (MG/MAC (P) .001-1/MAC)

 => s ti .001-1/mac
 109972 TI/MAC
 480333 .001-1/MAC
 L6 52568 TI .001-1/MAC
 (TI/MAC (P) .001-1/MAC)

 => s s .00001-1/mac
 20736 S/MAC
 480333 .00001-1/MAC
 L7 18869 S .00001-1/MAC
 (S/MAC (P) .00001-1/MAC)

 => d his

 (FILE 'HOME' ENTERED AT 13:39:12 ON 22 JUN 2003)

 FILE 'REGISTRY' ENTERED AT 13:39:21 ON 22 JUN 2003
 L1 28976 S FE 64-67/MAC
 L2 12630 S NI 33-37/MAC
 L3 40862 S C 1-3/MAC
 L4 80868 S SI 1-3/MAC
 L5 28460 S MG .001-1/MAC
 L6 52568 S TI .001-1/MAC
 L7 18869 S S .00001-1/MAC

 => s mn .01-1.5/mac
 302776 MN/MAC
 509199 .01-1.5/MAC
 L8 233319 MN .01-1.5/MAC
 (MN/MAC (P) .01-1.5/MAC)

 => s l1 and l2 and l3 and l4 and l5 and l6
 L9 2 L1 AND L2 AND L3 AND L4 AND L5 AND L6

 => d all 1-2

 L9 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2003 ACS
 RN 169932-92-7 REGISTRY
 CN Iron alloy, base, Fe 21-74, Ni 25-40, Co 0-25, C 0.3-2.5, Al 0.1-2, Nb 0.1-2, Ta
 MF 0.1-2, Ti 0.1-2, Si 0-2, Mn 0-1, Mg 0-0.1 (9CI) (CA INDEX NAME)
 CI AYS
 SR CA
 LC STN Files: CA, CAPLUS

 Component Component Component
 Percent Registry Number
 =====+=====+=====

Fe	21	-	74	7439-89-6
Ni	25	-	40	7440-02-0
Co	0	-	25	7440-48-4
C	0.3	-	2.5	7440-44-0
Al	0.1	-	2	7429-90-5
Nb	0.1	-	2	7440-03-1
Ta	0.1	-	2	7440-25-7
Ti	0.1	-	2	7440-32-6
Si	0	-	2	7440-21-3
Mn	0	-	1	7439-96-5
Mg	0	-	0.1	7439-95-4

1 REFERENCES IN FILE CA (1957 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1

AN 123:293081 CA
 TI Cast iron-nickel alloys for high-strength articles with decreased thermal expansion
 IN Nishimura, Takanobu; Suzuki, Motoo; Kanbara, Naoto
 PA Tokyo Shibaura Electric Co, Japan
 SO Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C22C037-08
 ICS C21D005-00
 CC 55-2 (Ferrous Metals and Alloys)
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI JP 07179984	A2	19950718	JP 1993-324369	19931222	
PRAI JP 1993-324369		19931222			
AB	The high-Ni cast iron contains Ni aluminide intermetallic compds. pptd. in the microstructure for hardening and decreased thermal expansion. The Fe-Ni alloys contain C 0.3-2.5, Si .1toreq.2.0, Mn .1toreq.1.0, Mg .1toreq.0.1, Ni 25-40, Co 0-25, Al 0.1-2.0, and optionally Ti 0.1-2.0, Nb 0.1-2.0, and/or Ta 0.1-2.0%. The castings are finished by soln. treating at 800-1000.degree., quenching, and aging at 450-750.degree..				
ST	cast iron nickel alloy heat treatment; nickel aluminide pptn iron alloy casting				
IT	Cast metals and alloys RL: TEM (Technical or engineered material use); USES (Uses) (iron-nickel alloys; cast iron-nickel alloys for high-strength articles with dispersed aluminide particles)				
IT	169684-53-1	169684-54-2	169684-55-3	169684-56-4	169684-57-5
	169684-58-6	169684-59-7	169932-91-6	169932-92-7	
IT	RL: TEM (Technical or engineered material use); USES (Uses) (cast; iron-nickel alloy castings for high-strength articles with decreased thermal expansion)				
IT	12003-81-5 RL: MOA (Modifier or additive use); USES (Uses) (pptd. dispersion; iron-nickel alloy castings for high-strength articles with dispersed aluminide particles)				

L9 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2003 ACS
 RN 55192-90-0 REGISTRY
 CN Iron alloy, base, Fe 27-98, Ni 0-36, Cu 0-8, Al 0-7, Mn 0-7, C 1.5-6.5, Si 0.5-6, Ti 0-2, B 0-0.1, C 0-0.1, Mg 0-0.1 (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Aluminum alloy, nonbase, Fe 27-98, Ni 0-36, Cu 0-8, Al 0-7, Mn 0-7, C 1.5-6.5, Si 0.5-6, Ti 0-2, B 0-0.1, Ce 0-0.1, Mg 0-0.1
 CN Carbon alloy, nonbase, Fe 27-98, Ni 0-36, Cu 0-8, Al 0-7, Mn 0-7, C 1.5-6.5, Si

CN 0.5-6,Ti 0.2,B 0-0.1,Ce 0-0.1,Mg 0-0.1
 CN Copper alloy, nonbase, Fe 27-98,Ni 0-36,Cu 0-8,Al 0-7,Mn 0-7,C 1.5-6.5,Si
 0.5-6,Ti 0-2,B 0-0.1,Ce 0-0.1,Mg 0-0.1
 CN Manganese alloy, nonbase, Fe 27-98,Ni 0-36, Cu 0-8,Al 0-7,Mn 0-7,C
 1.5-6.5,Si 0.5-6,Ti 0-2,B 0-0.1,Ce 0-0.1,Mg 0-0.1
 CN Manganese alloy, nonbase, Fe 27-98,Ni 0-36,Cu 0-8,Al 0-7,Mn 0-7,C
 1.5-6.5,Si 0.5-6,Ti 0-2,B 0-0.1,Ce 0-0.1,Mg 0-0.1
 CN Silicon alloy, nonbase, Fe 27-98,Ni 0-36,Cu 0-8,Al 0-7,Mn 0-7,C 1.5-6.5,Si
 0.5-6,Ti 0-2,B 0-0.1,Ce 0-0.1,Mg 0-0.1
 CN Titanium alloy, nonbase, Fe 27-98,Ni 0-36,Cu 0-8,Al 0-7,Mn 0-7,C
 1.5-6.5,Si 0.5-6,Ti 0-2,B 0-0.1,Ce 0-0.1,Mg 0-0.1
 MF C . Al . B . Ce . Cu . Fe . Mg . Mn . Ni . Si . Ti
 CI AYS
 LC STN Files: CA, CAPLUS

Component	Component	Component	
Percent		Registry Number	
Fe	27	-	98
Ni	0	-	36
Cu	0	-	8
Al	0	-	7
Mn	0	-	7
C	1.5	-	6.5
Si	0.5	-	6
Ti	0	-	2
B	0	-	0.1
Ce	0	-	0.1
Mg	0	-	0.1

1 REFERENCES IN FILE CA (1957 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1

AN 82:143614 CA
 TI Sintered steel alloys containing silicon carbide
 IN Frehn, Fritz
 PA Deutsche Edelstahlwerke A.-G.
 SO Ger. Offen., 7 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC C22C
 CC 55-4 (Ferrous Metals and Alloys)
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 2318414	A1	19741031	DE 1973-2318414	19730412
PRAI DE 1973-2318414		19730412		
AB	Sintered alloys of high wear resistance and good damping properties, useful for machine and engine parts, contain TiC 25-33, C(bonded) 0.50, free C 3.0, Si 2.0-3.5, Ni 1.5% and the rest Fe. They have a Rockwell C hardness of 60-4, and damping value Q-1 of >30 times. 10-5.			
ST	titanium carbide sintered steel; nickel silicon carbide steel; sintered alloy carbide steel; wear resistant sintered steel; vibration damping sintered steel			
IT	Vibration (damping, by wear-resistant titanium carbide alloys, for engine parts)			
IT	55192-89-7 55192-90-0			
RL: USES (Uses)	(sintered wear-resistant, with good vibration-damping for engine parts)			

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'Y' IS NOT VALID HERE
For an explanation, enter "HELP LOGOFF".

=> log hold
COST IN U.S. DOLLARS

	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	44.70	44.91
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-1.24	-1.24

SESSION WILL BE HELD FOR 60 MINUTES
STN INTERNATIONAL SESSION SUSPENDED AT 13:43:07 ON 22 JUN 2003

Welcome to STN International! Enter x:x

LOGINID:ssspta1101sxv

PASSWORD:

* * * * * RECONNECTED TO STN INTERNATIONAL * * * * *
SESSION RESUMED IN FILE 'REGISTRY' AT 13:45:17 ON 22 JUN 2003
FILE 'REGISTRY' ENTERED AT 13:45:17 ON 22 JUN 2003
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COST IN U.S. DOLLARS

	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	44.70	44.91
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-1.24	-1.24

=> s l1 and l2 and l3 and l4 and l5 and l6 and l7 and l8
L10 0 L1 AND L2 AND L3 AND L4 AND L5 AND L6 AND L7 AND L8

=> s l1 and l2 and l3 and l6 and l7 and l8
L11 0 L1 AND L2 AND L3 AND L6 AND L7 AND L8

=> s l1 and l2 and l6 and l7 and l8
L12 1 L1 AND L2 AND L6 AND L7 AND L8

=> d all

L12 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS
RN 62700-03-2 REGISTRY
CN Iron alloy, base, Fe 11-82,Ni 3.9-39,Cr 13-25,Co 0-7.6,Mn 0.6-3.9,W
0-2.8,Mo 0-2.7,Cu 0-2.5,Si 0.2-2.2,Nb 0-0.9,Ti 0-0.8,C 0-0.5,N 0-0.4,S
0-0.3,Al 0-0.1 (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Chromium alloy, nonbase, Fe 11-82,Ni 3.9-39,Cr 13-25,Co 0-7.6,Mn 0.6-3.9,W
0-2.8,Mo 0-2.7,Cu 0-2.5,Si 0.2-2.2,Nb 0-0.9,Ti 0-0.8,C 0-0.5,N 0-0.4,S
0-0.3,Al 0-0.1
CN Cobalt alloy, nonbase, Fe 11-82,Ni 3.9-39,Cr 13-25,Co 0-7.6,Mn 0.6-3.9,W
0-2.8,Mo 0-2.7,Cu 0-2.5,Si 0.2-2.2,Nb 0-0.9,Ti 0-0.8,C 0-0.5,N 0-0.4,S
0-0.3,Al 0-0.1
CN Copper alloy, nonbase, Fe 11-82,Ni 3.9-39,Cr 13-25,Co 0-7.6,Mn 0.6-3.9,W
0-2.8,Mo 0-2.7,Cu 0-2.5,Si 0.2-2.2,Nb 0-0.9,Ti 0-0.8,C 0-0.5,N 0-0.4,S
0-0.3,Al 0-0.1
CN Manganese alloy, nonbase, Fe 11-82,Ni 3.9-39,Cr 13-25,Co 0-7.6,Mn
0.6-3.9,W 0-2.8,Mo 0-2.7,Cu 0-2.5,Si 0.2-2.2,Nb 0-0.9,Ti 0-0.8,C 0-0.5,N

CN 0-0.4,S 0-0.3,Al 0-0.1
 CN Molybdenum alloy, nonbase, Fe 11-82,Ni 3.9-39,Cr 13-25,Co 0-7.6,Mn
 0.6-3.9,W 0-2.8,Mo 0-2.7,Cu 0-2.5,Si 0.2-2.2,Nb 0-0.9,Ti 0-0.8,C 0-0.5,N
 0-0.4,S 0-0.3,Al 0-0.1
 CN Nickel alloy, nonbase, Fe 11-82,Ni 3.9-39,Cr 13-25,Co 0-7.6,Mn 0.6-3.9,W
 0-2.8,Mo 0-2.7,Cu 0-2.5,Si 0.2-2.2,Nb 0-0.9,Ti 0-0.8,C 0-0.5,N 0-0.4,S
 0-0.3,Al 0-0.1
 CN Silicon alloy, nonbase, Fe 11-82,Ni 3.9-39,Cr 13-25,Co 0-7.6,Mn 0.6-3.9,W
 0-2.8,Mo 0-2.7,Cu 0-2.5,Si 0.2-2.2,Nb 0-0.9,Ti 0-0.8,C 0-0.5,N 0-0.4,S
 0-0.3,Al 0-0.1
 CN Tungsten alloy, nonbase, Fe 11-82,Ni 3.9-39,Cr 13-25,Co 0-7.6,Mn 0.6-3.9,W
 0-2.8,Mo 0-2.7,Cu 0-2.5,Si 0.2-2.2,Nb 0-0.9,Ti 0-0.8,C 0-0.5,N 0-0.4,S
 0-0.3,Al 0-0.1
 MF C . Al . Co . Cr . Cu . Fe . Mn . Mo . N . Nb . Ni . S . Si . Ti . W
 C1 AYS
 LC STN Files: CA, CAPLUS

Component	Component	Component	
	Percent	Registry Number	
Fe	11	-	82
Ni	3.9	-	39
Cr	13	-	25
Co	0	-	7.6
Mn	0.6	-	3.9
W	0	-	2.8
Mo	0	-	2.7
Cu	0	-	2.5
Si	0.2	-	2.2
Nb	0	-	0.9
Ti	0	-	0.8
C	0	-	0.5
N	0	-	0.4
S	0	-	0.3
Al	0	-	0.1

1 REFERENCES IN FILE CA (1957 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1

AN 86:159754 CA
 TI Resistance to oxidation at elevated temperatures of a number of alloy steels
 AU Truman, J. E.; Pirt, K. R.
 CS Brown-Firth Res. Lab., Sheffield, UK
 SO British Corrosion Journal (1976), 11(4), 188-94
 CODEN: BCRJA3; ISSN: 0007-0599
 DT Journal
 LA English
 CC 56-8 (Nonferrous Metals and Alloys)
 AB Twelve com. nonstainless steels of C and low-alloy types, 17 com. martensitic stainless steels, 11 com. ferritic stainless steels, 26 com. austenitic stainless steels, 4 com. Ni-base alloys, and 7 exptl. steels contg. 1.45-30.16% Cr were subjected to cyclic oxidn. tests in natural gas combustion products (mixts. of N, O, CO₂, and steam) at various temps. and std. heat treatments. Oxidn. resistances are expressed in terms of breakdown-temp. ranges and temps. for scaling indexes of 1, 5, and 10. Each specimen was subjected to 7 heating cycles of 6 h each followed by cooling, scale collection, and weighing. Tests were conducted at 50.degree. intervals over ranges such that the scaling indexes ranged from low to high values. The beneficial effects of addns. of Cr up to 30% and of addns. of Si and/or Al to Cr steels were confirmed. Co, Cu, Mo, V, Nb, Ti, and N had little effect. Mn was detrimental to Cr steels and so was C

in some cases. Ni enhanced oxidn. resistance in some cases, but was detrimental in others. S in free-machining stainless steels counteracted the effects of high Mn contents.

ST oxidn resistance nickel alloy steel; stainless steel oxidn resistance;

IT scaling nickel alloy steel

IT Scale (coating)
(formation of, on nickel alloys and steels at high temp. in natural gas combustion products)

IT Combustion gases
(from natural gas, oxidn. and scaling by, of nickel alloys and steels at high temp.)

IT 7704-34-9, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation and scaling resistance of free-machining steels contg.)

IT 62699-99-4, reactions 62700-00-9 62700-01-0 62700-02-1 62700-03-2
62700-04-3 62700-05-4 62700-06-5 62700-07-6 62712-99-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. and scaling of, by natural gas combustion products at high temp.)

IT 7429-90-5, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. and scaling resistance of chromium steels contg.)

=> d his full

(FILE 'HOME' ENTERED AT 13:39:12 ON 22 JUN 2003)

FILE 'REGISTRY' ENTERED AT 13:39:21 ON 22 JUN 2003

L1	28976	SEA	PLU=ON	FE	64-67/MAC
L2	12630	SEA	PLU=ON	NI	33-37/MAC
L3	40862	SEA	PLU=ON	C	1-3/MAC
L4	80868	SEA	PLU=ON	SI	1-3/MAC
L5	28460	SEA	PLU=ON	MG	.001-1/MAC
L6	52568	SEA	PLU=ON	TI	.001-1/MAC
L7	18869	SEA	PLU=ON	S	.00001-1/MAC
L8	233319	SEA	PLU=ON	MN	.01-1.5/MAC
L9	2	SEA	PLU=ON	L1 AND L2 AND L3 AND L4 AND L5 AND L6	
				D ALL 1-2	
L10	0	SEA	PLU=ON	L1 AND L2 AND L3 AND L4 AND L5 AND L6 AND L7 AND L8	
L11	0	SEA	PLU=ON	L1 AND L2 AND L3 AND L6 AND L7 AND L8	
L12	1	SEA	PLU=ON	L1 AND L2 AND L6 AND L7 AND L8	
				D ALL	

FILE HOME

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 20 JUN 2003 HIGHEST RN 534773-28-9

DICTIONARY FILE UPDATES: 20 JUN 2003 HIGHEST RN 534773-28-9

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties

in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> s l1 and l2 and l3 and l4 and l5 and l6 and l7
L13 0 L1 AND L2 AND L3 AND L4 AND L5 AND L6 AND L7

=> s l1 and l2 and l5 and l6 and l7
L14 0 L1 AND L2 AND L5 AND L6 AND L7

=> d his full

(FILE 'HOME' ENTERED AT 13:39:12 ON 22 JUN 2003)

FILE 'REGISTRY' ENTERED AT 13:39:21 ON 22 JUN 2003

L1	28976	SEA	PLU=ON	FE	64-67/MAC
L2	12630	SEA	PLU=ON	NI	33-37/MAC
L3	40862	SEA	PLU=ON	C	1-3/MAC
L4	80868	SEA	PLU=ON	SI	1-3/MAC
L5	28460	SEA	PLU=ON	MG	.001-1/MAC
L6	52568	SEA	PLU=ON	TI	.001-1/MAC
L7	18869	SEA	PLU=ON	S	.00001-1/MAC
L8	233319	SEA	PLU=ON	MN	.01-1.5/MAC
L9	2	SEA	PLU=ON	L1 AND L2 AND L3 AND L4 AND L5 AND L6	
				D ALL 1-2	
L10	0	SEA	PLU=ON	L1 AND L2 AND L3 AND L4 AND L5 AND L6 AND L7 AND L8	
L11	0	SEA	PLU=ON	L1 AND L2 AND L3 AND L6 AND L7 AND L8	
L12	1	SEA	PLU=ON	L1 AND L2 AND L6 AND L7 AND L8	
				D ALL	
L13	0	SEA	PLU=ON	L1 AND L2 AND L3 AND L4 AND L5 AND L6 AND L7	
L14	0	SEA	PLU=ON	L1 AND L2 AND L5 AND L6 AND L7	

FILE HOME

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 20 JUN 2003 HIGHEST RN 534773-28-9
DICTIONARY FILE UPDATES: 20 JUN 2003 HIGHEST RN 534773-28-9

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d cost full

FILE & COST CENTER		QUANTITY @	RATE	ESTIMATED COST U.S. DOLLARS
HOME FILE	COST=			
CONNECT HOURS		0.01 @	15.00	0.15
INTERNET HOURS		0.01 @	6.00	0.06
REGISTRY FILE	COST=			
CONNECT HOURS		0.10 @	34.00	3.40
INTERNET HOURS		0.10 @	6.00	0.60

DISPLAYS IN FORMAT ABS	3	@	1.34	4.02
DISPLAYS IN FORMAT BIB	3	@	0.96	2.88
DISPLAYS IN FORMAT IDE	3	@	1.68	5.04
DISPLAYS IN FORMAT IND	3	@	0.29	0.87
SEARCH TERMS IN FIELD MAC	8	@	4.22	33.76

SUMMARY BY FILE	AND	COST CENTER	HOURS	ESTIMATED COST U.S. DOLLARS
HOME FILE		(NONE)	0.01	0.21
REGISTRY FILE		(NONE)	0.10	50.57

COSTS INCLUDE TELECOMMUNICATION FEES 0.11 0.66

SUMMARY BY	COST CENTER	HOURS	ESTIMATED COST U.S. DOLLARS
YOUR TOTAL SESSION COSTS ARE	(NONE)	0.11	50.78
		0.11	50.78

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-1.86	-1.86

IN FILE 'REGISTRY' AT 13:47:48 ON 22 JUN 2003

=> log y COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	50.57	50.78
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-1.86	-1.86

STN INTERNATIONAL LOGOFF AT 13:47:56 ON 22 JUN 2003